

CHAPTER 4

VEHICULAR TRAFFIC

4-1. Effect on pavement design. In order to determine the pavement thickness required for an adequate design, it is necessary that the designer obtain traffic data which will include: (a) the types of vehicles to be served (passenger cars, light trucks, heavy trucks, tanks, etc.), (b) the distribution of the vehicles by type, (c) vehicle loadings, including the maximum single-axle and tandem-axle loadings for pneumatic-tired vehicles and the gross weight of the heaviest track-laying vehicle expected, and (d) the average daily volume (ADV) of traffic which, in turn, determines the total volume of traffic anticipated during the design life of the pavement.

4-2. Traffic evaluation.

a. Pneumatic-tired vehicles. To aid in evaluating vehicular traffic for the purpose of pavement design, pneumatic-tired vehicles have been divided into three groups, as follows:

- Group 1. Passenger cars, panel trucks, and pickup trucks.
- Group 2. Two-axle trucks.
- Group 3. Three-, four-, and five-axle trucks.

Pneumatic-tired vehicular traffic has been classified into four general categories based on the distribution of vehicles from each of the three groups listed above. These traffic categories are defined as follows:

Category I - Traffic composed primarily of passenger cars, panel and pickup trucks (Group 1 vehicles), and containing not more than 1 percent two-axle trucks (Group 2 vehicles).

Category II - Traffic composed primarily of passenger cars, panel and pickup trucks (Group 1 vehicles), but containing as much as 10 percent two-axle trucks (Group 2 vehicles). No trucks having three or more axles (Group 3 vehicles) are permitted in this category.

Category III - Traffic containing as much as 15 percent trucks, but with not more than 1 percent of the total traffic composed of trucks having three or more axles (Group 3 vehicles).

Category IV - Traffic containing as much as 25 percent trucks, but with not more than 10 percent of the total traffic composed of trucks having three or more axles (Group 3 vehicles).

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b. Track-laying vehicles and forklift trucks. Track-laying vehicles having gross weights not exceeding 15,000 pounds and forklift trucks having gross weights not exceeding 6,000 pounds may be treated as two-axle trucks (Group 2 vehicles) and substituted for trucks of this type in the traffic categories defined above on a one-for-one basis. Track-laying vehicles having gross weights exceeding 15,000 pounds but not exceeding 40,000 pounds and forklift trucks having gross weights exceeding 6,000 pounds but not exceeding 10,000 pounds may be treated as Group 3 vehicles and substituted for trucks having three or more axles in the appropriate traffic categories on a one-for-one basis. Traffic composed of track-laying vehicles exceeding 40,000 pounds and forklift trucks exceeding 10,000-pound gross weight has been divided into the following three categories.

Maximum Vehicle Gross Weight, pounds		
Category	Track-laying vehicles	Forklift truck
V	60,000	15,000
VI	90,000	20,000
VII	120,000	35,000